

a processor;

a computer readable memory unit coupled to the processor, the computer readable memory containing program instructions stored therein that, when executed via the processor, implements a method of calculating a transform matrix for transforming a field vector from a second field to a field vector in a first field, the method comprising the steps:

- a) receiving a reference code state chosen for the first field;
- b) generating a first field vector of the reference code state;
- c) iterating an LFSR state from the first field vector;
- d) generating a new field vector from the new LFSR state;
- e) assembling the first field vector and the new field vector into a the transform

matrix, the assembling step comprising the steps of:

- e1) providing the first field vector as the lowest row in the transform matrix;
- e2) providing the new field vector as the next highest row in the transform

matrix; and

e3) repeating providing step e2) a total of $N-2$ times for a total of N rows in the transform matrix, wherein N is an integer; and

f) repeating steps c) ~~through and~~ d) a quantity of N times, wherein N is the a degree of the a polynomial defining the first field and the second field.

Claims 35-41 (Canceled)